

41 26
 92 3-10 2.5, 16.
 28
 94 2-28
 2.5, 10.1
 10

Homework 7

- 4.1 2. a $x=2$
 b $y=C^{++}$ $x=PASCAL$
 b, a $(a,a), (a,b), (b,a), (b,b)$
 b $(4,4), (4,5), (4,6), (5,4), (5,5), (5,6),$
 $(6,4), (6,5), (6,6)$

- 4.2 2. a true b false c true
 d false e false f false

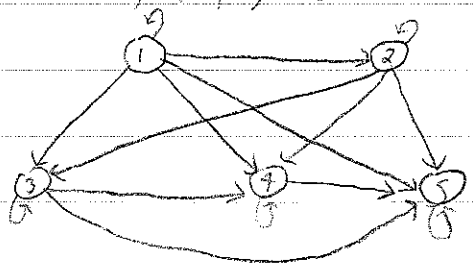
4. domain = $\{a, b, c, d\}$
 range = $\{1, 2\}$

6. domain = $\{1, 2, 3\}$
 range = $\{1, 4, 9\}$

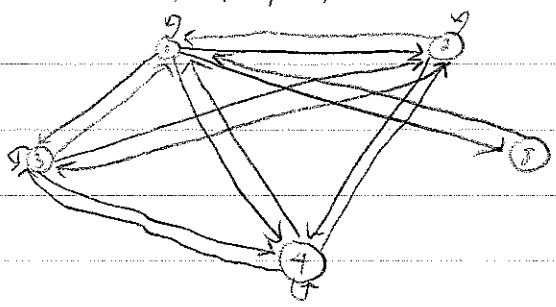
8. $\frac{b}{a}$

domain = $\{1, 2, 3\}$
 range = $\{1, 4, 6, 9\}$

10. domain = $\{1, 2, 3, 4, 5\}$
 range = $\{1, 2, 3, 4, 5\}$



12. domain = $\{1, 2, 3, 4, 8\}$
 range = $\{1, 2, 3, 4, 8\}$



14. $(3, 0), (0, 2), (-3, 4), (6, -2),$
 $\text{domain} = (-\infty, \infty)$
 $\text{range} = (-\infty, \infty)$

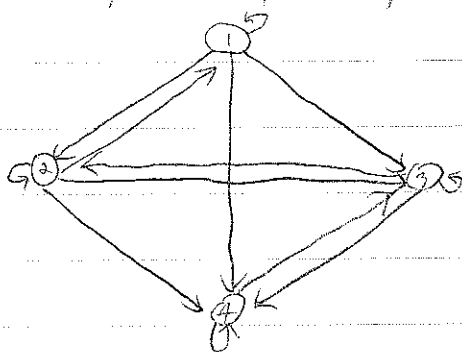
16. a on
 b last
 c phase

26. $\{(1, 2), (2, 2), (2, 3), (1, 3), (1, 4), (4, 1),$
 $(4, 4), (4, 5)\}$

28.

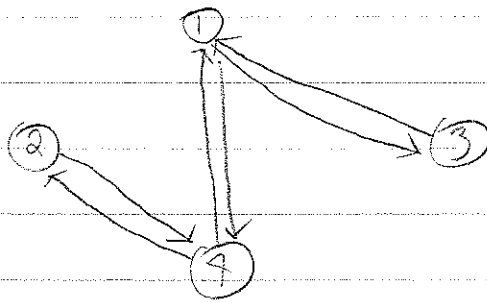
1	$\rightarrow$	$\text{in} = 1$	$\text{out} = 3$
2	$\rightarrow$	$\text{in} = 2$	$\text{out} = 2$
3	$\rightarrow$	$\text{in} = 2$	$\text{out} = 0$
4	$\rightarrow$	$\text{in} = 2$	$\text{out} = 3$
5	$\rightarrow$	$\text{in} = 1$	$\text{out} = 0$

- 44
2. not reflexive, not symmetric, transitive
 4. reflexive, symmetric, transitive
 6. reflexive, symmetric, transitive
 8. not reflexive, symmetric, not transitive
 10. not reflexive, not symmetric, not transitive
 - 13.



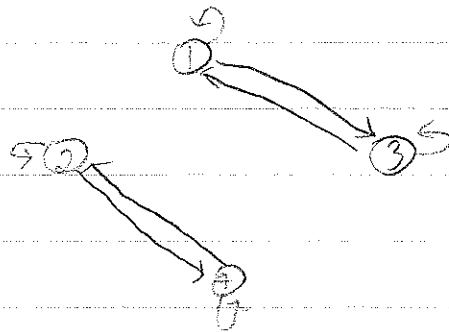
reflexive, transitive, not symmetric

14.



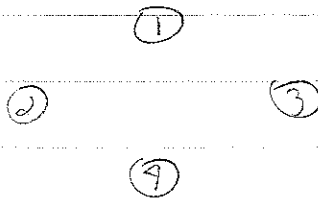
not reflexive, symmetric, not transitive

16.



reflexive, transitive, symmetric

18.



symmetric, not reflexive, not transitive

20.

reflexive, symmetric, transitive

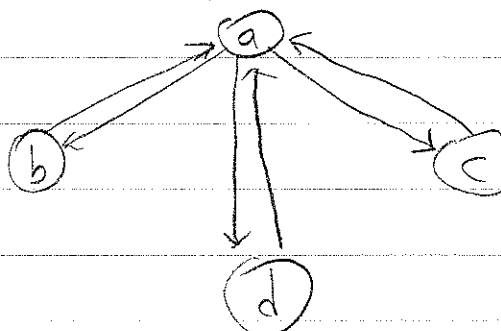
22.

reflexive, symmetric, transitive

24.

not reflexive, not symmetric, transitive

26.



28.

$$R = \{(a,b), (a,c), (b,c), (b,a), (c,a), (c,b), (d,d), (d,e), (e,d)\}$$

4.2 16. a

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

$$\frac{y^2}{9} = \frac{3}{9}$$

$$y = \pm \frac{\sqrt{3}}{2}$$

$$\left\{ \frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}, \frac{\sqrt{2}}{3}, -\frac{\sqrt{2}}{3} \right\}$$

b.

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

$$\frac{y^2}{9} = \frac{-5}{9}$$

$$\{ \}$$

c.

$$\{ \}$$

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

$$\frac{x^2}{4} = \frac{8}{9}$$

$$x^2 = \frac{8\sqrt{2}}{3}$$

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

$$x = 0$$